

Title (en)  
APPARATUS AND METHOD FOR PRODUCING A SYNTHESIS GAS

Title (de)  
VORRICHTUNG UND VERFAHREN ZUR ERZEUGUNG EINES SYNTHESGASES

Title (fr)  
DISPOSITIF ET PROCÉDÉ DE PRODUCTION D'UN GAZ DE SYNTHÈSE

Publication  
**EP 3288891 A1 20180307 (DE)**

Application  
**EP 16722103 A 20160429**

Priority

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- EP 2016059620 W 20160429

Abstract (en)  
[origin: WO2016174207A1] The apparatus described here has a first reaction space with an inlet for a medium composed of hydrocarbon, especially a gas having the composition C<sub>n</sub>H<sub>m</sub>, and an outlet. In the first reaction space, means of splitting the hydrocarbon with supply of heat into carbon particles and hydrogen are provided between the inlet and the outlet. The apparatus also has a second reaction space having an elongated configuration with a first inlet at one end and an outlet at the opposite end, wherein the first inlet of the second reaction space is connected to the outlet of the first reaction space, and wherein the second reaction space has an increasing flow cross section between the inlet and the outlet (measured at right angles to the longitudinal extent of the second reaction space). Also provided is at least one second inlet into the second reaction space, wherein the second inlet can be connected to a source for CO<sub>2</sub> and/or H<sub>2</sub>O. Preferably, the second inlet is connected to a source for CO<sub>2</sub>, and hence CO<sub>2</sub> is passed through it in operation. A method of operation for the purpose is likewise described. The apparatus and the method of operation can be used to improve the energy balance of synthesis gas production compared to known methods.

IPC 8 full level  
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Citation (search report)  
See references of WO 2016174207A1

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